

What is claimed is:

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1. ~~A method for driving a liquid crystal display in which~~
a liquid crystal cell is mounted at an intersection of each of
a plurality of scanning electrodes placed at specified intervals
in a row direction and each of a plurality of signal electrodes
placed at specified intervals in a column direction, by
sequentially feeding scanning signals to said plurality of said
scanning electrodes and by sequentially feeding data signals to
said plurality of said signal electrodes, comprising:

a step of reversing a polarity of each of said data signals
for every $2n$ (n is a natural number) pieces of said scanning
electrodes and for every said signal electrode in said liquid
crystal display and sequentially feeding each of said data
signals having the reversed polarity to each of corresponding said
signal electrodes.

2. The method for driving the liquid crystal display
according to Claim 1, wherein a position of each of color filters
for red, green, and blue each corresponding to each of said liquid
crystal cells in said liquid crystal display is deviated by one
half of a pitch from a subsequent said scanning electrode and said
liquid crystal display is of a delta type in which dot pixel
portions made up of three primary colors including red, green,
and blue that makes up one pixel portion are arranged in a
triangular form.

3. The method for driving the liquid crystal display
~~according to Claim 1, wherein said liquid crystal display is of~~

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3 a mosaic type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from a subsequent said scanning electrode.

1 4. The method for driving the liquid crystal display
2 according to Claim 1, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which color filters made
4 up of red, green, and blue color filters and additional any one
5 color filter selected out of said red, green, and blue color
6 filters are arranged in a quadrangular form.

1 5. The method for driving the liquid crystal display
2 according to Claim 1, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up dot pixel portions having different colors is connected to one
5 said signal electrode.

1 6. The method for driving the liquid crystal display
2 according to Claim 1, wherein said liquid crystal display is of
3 an active-matrix type and its switching element is made up of a
4 thin film transistor.

1 7. A method for driving a liquid crystal display in which
2 a liquid crystal cell is mounted at an intersection of each of
3 a plurality of scanning electrodes placed at specified intervals
4 in a row direction and each of a plurality of signal electrodes
5 placed at specified intervals in a column direction, by

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6 sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

9 a step of displaying a monochromatic color by reversing a
10 data signal that changes, relative to a common potential being
11 applied to one terminal of all said liquid crystal cells and during
12 four consecutive scanning periods, sequentially into a first
13 signal having a first potential of a first polarity and a second
14 signal having a second potential of said first polarity and into
15 a first signal having a first potential of a second polarity and
16 a second signal having a second potential of said second polarity,
17 for every said signal electrode and by sequentially feeding said
18 data signal having the reversed polarity to each of corresponding
19 said signal electrodes.

1 8. The method for driving the liquid crystal display
2 according to Claim 7, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from a subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three primary colors including red, green,
8 and blue that makes up one pixel portion are arranged in a
9 triangular form.

1 9. The method for driving the liquid crystal display
2 according to Claim 7, wherein said liquid crystal display is of
3 a mosaic type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are

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1 10. The method for driving the liquid crystal display
2 according to Claim 7, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which color filters made
4 up of red, green, and blue color filters and additional any one
5 color filter selected out of said red, green, and blue color
6 filters are arranged in a quadrangular form.

1 11. The method for driving the liquid crystal display
2 according to Claim 7, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up dot pixel portions having different colors is connected to one
5 said signal electrode.

1 12. The method for driving the liquid crystal display
2 according to Claim 7, wherein said liquid crystal display is of
3 an active-matrix type and its switching element is made up of a
4 thin film transistor.

1 13 A method for driving a liquid crystal display in which
2 a liquid crystal cell is mounted at an intersection of each of
3 a plurality of scanning electrodes placed at specified intervals
4 in a row direction and each of a plurality of signal electrodes
5 placed at specified intervals in a column direction, by
6 sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to

8 said plurality of said signal electrodes, comprising:

9 a step of displaying shades of gray by reversing a polarity
10 of a data signal having a potential corresponding to an
11 intermediate transmittance between maximum and minimum
12 transmittance of said liquid crystal cell for every $2n$ (n is a
13 natural number) pieces of said scanning electrodes in said liquid
14 crystal display and for every said signal electrode and by
15 sequentially feeding said data signal having the reversed
16 polarity to each of corresponding said signal electrodes.

1 14. The method for driving the liquid crystal display
2 according to Claim 13, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from a subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three primary colors including red, green,
8 and blue that makes up one pixel portion are arranged in a
9 triangular form.

1 15. The method for driving the liquid crystal display
2 according to Claim 13, wherein said liquid crystal display is of
3 a mosaic type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from a subsequent said scanning electrode.

1 16. The method for driving the liquid crystal display

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2 according to Claim 13, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which color filters made
4 up of red, green, and blue color filters and additional any one
5 color filter selected out of said red, green, and blue color
6 filters are arranged in a quadrangular form.

1 17. The method for driving the liquid crystal display
2 according to Claim 13, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up dot pixel portions having different colors is connected to one
5 said signal electrode.

1 18. The method for driving the liquid crystal display
2 according to Claim 13, wherein said liquid crystal display is of
3 an active-matrix type and its switching element is made up of a
4 thin film transistor.

1 19. A method for driving a liquid crystal display in which
2 a liquid crystal cell is mounted at an intersection of each of
3 a plurality of scanning electrodes placed at specified intervals
4 in a row direction and each of a plurality of signal electrodes
5 placed at specified intervals in a column direction, by
6 sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

9 a step of displaying gray-scale color of a monochromatic
10 color by reversing a data signal made up, relative to a common
11 potential being applied to one terminal of all said liquid crystal
12 cells and during four consecutive scanning periods, of

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13 combinations of a signal having a potential of a first polarity
14 that corresponds to an intermediate transmittance between maximum
15 and minimum transmittance of said liquid crystal cell of a signal
16 having a potential of a first polarity that corresponds to said
17 minimum transmittance of said liquid crystal cell and of
18 combinations of a signal having a potential of a second polarity
19 that corresponds to said intermediate transmittance between said
20 maximum and minimum transmittance of said liquid crystal cell and
21 of a signal having a potential of said second polarity that
22 corresponds to said minimum transmittance of said liquid crystal
23 cell, for every said signal electrode and by sequentially feeding
24 said data signal having the reversed polarity to each of
25 corresponding said signal electrodes.

1 20. The method for driving the liquid crystal display
2 according to Claim 19, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from a subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three primary colors including red, green,
8 and blue that makes up one pixel portion are arranged in a
9 triangular form.

1 21. The method for driving the liquid crystal display
2 according to Claim 19, wherein said liquid crystal display is of
3 a mosaic type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction

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6 and arrangement of said three color filters is deviated by one
7 or two pitches from a subsequent said scanning electrode.

1 22. The method for driving the liquid crystal display
2 according to Claim 19, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which color filters made
4 up of red, green, and blue color filters and additional any one
5 color filter selected out of said red, green, and blue color
6 filters are arranged in a quadrangular form.

1 23. The method for driving the liquid crystal display
2 according to Claim 19, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up dot pixel portions having different colors is connected to one
5 said signal electrode.

1 24. The method for driving the liquid crystal display
2 according to Claim 19, wherein said liquid crystal display is of
3 an active-matrix type and its switching element is made up of a
4 thin film transistor.

1 25. A driving circuit for a liquid crystal display in
2 which a liquid crystal cell is mounted at an intersection of each
3 of a plurality of scanning electrodes placed at specified
4 intervals in a row direction and each of a plurality of signal
5 electrodes placed at specified intervals in a column direction,
6 by sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

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9 a signal electrode driving circuit to reverse a polarity
10 of each of said data signals for every $2n$ (n is a natural number)
11 pieces of said scanning electrodes and for every signal electrode
12 in said liquid crystal display and to sequentially feed said each
13 of said data signals having reversed polarity to each of
14 corresponding said signal electrodes.

1 26. The driving circuit for a liquid crystal display
2 according to Claim 25, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three colors including red, green, and blue
8 that makes up one pixel portion are arranged in a triangular form.

1 27. The driving circuit for a liquid crystal display
2 according to Claim 25, wherein said liquid crystal display is of
3 a mosaic-type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from subsequent said scanning electrode.

1 28. The driving circuit for a liquid crystal display
2 according to Claim 25, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which said color filters
4 made up of said red, green, and blue color filters and additional
5 any one color filter selected out of said red, green, and blue

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6 color filters are arranged in a quadrangular form.

1 29. The driving circuit for a liquid crystal display
2 according to Claim 25, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up said dot pixel portion having different colors is connected
5 to one said signal electrode.

1 30. The driving circuit for a liquid crystal display
2 according to Claim 25, wherein said liquid crystal display is of
3 an active-matrix type and its said switching element is made up
4 of a thin film transistor.

1 31. A driving circuit for a liquid crystal display in
2 which a liquid crystal cell is mounted at an intersection of each
3 of a plurality of scanning electrodes placed at specified
4 intervals in a row direction and each of a plurality of signal
5 electrodes placed at specified intervals in a column direction,
6 by sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

9 a signal electrode driving circuit to reverse a data signal
10 that changes, relative to a common potential being applied to one
11 terminal of all said liquid crystal cells and during four
12 consecutive scanning periods, sequentially into a first signal
13 having a first potential of a first polarity and a second signal
14 having a second potential of said first polarity and into a first
15 signal having a first potential of a second polarity and a second
16 signal having a second potential of said second polarity, for said

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17 every signal electrode and to sequentially feed said data signal
18 having the reversed polarity to each of corresponding said signal
19 electrodes.

1 32. The driving circuit for a liquid crystal display
2 according to Claim 31, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three colors including red, green, and blue
8 that makes up one pixel portion are arranged in a triangular form.

1 33. The driving circuit for a liquid crystal display
2 according to Claim 31, wherein said liquid crystal display is of
3 a mosaic-type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from subsequent said scanning electrode.

1 34. The driving circuit for a liquid crystal display
2 according to Claim 31, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which said color filters
4 made up of said red, green, and blue color filters and additional
5 any one color filter selected out of said red, green, and blue
6 color filters are arranged in a quadrangular form.

1 35. The driving circuit for a liquid crystal display

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2 according to Claim 31, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up said dot pixel portion having different colors is connected
5 to one said signal electrode.

1 36. The driving circuit for a liquid crystal display
2 according to Claim 31, wherein said liquid crystal display is of
3 an active-matrix type and its said switching element is made up
4 of a thin film transistor.

1 37. A driving circuit for a liquid crystal display in
2 which a liquid crystal cell is mounted at an intersection of each
3 of a plurality of scanning electrodes placed at specified
4 intervals in a row direction and each of a plurality of signal
5 electrodes placed at specified intervals in a column direction,
6 by sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

9 a signal electrode driving circuit to reverse a polarity
10 of a data signal having a potential corresponding to an
11 intermediate transmittance between maximum and minimum
12 transmittance of said liquid crystal cell for every $2n$ (n is a
13 natural number) pieces of said scanning electrode in said liquid
14 crystal display and for every said signal electrode and to
15 sequentially feed said data signal having the reversed polarity
16 to each of corresponding signal electrodes.

1 38. The driving circuit for a liquid crystal display
2 according to Claim 37, wherein a position of each of color filters

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3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three colors including red, green, and blue
8 that makes up one pixel portion are arranged in a triangular form.

1 39. The driving circuit for a liquid crystal display
2 according to Claim 37, wherein said liquid crystal display is of
3 a mosaic-type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from subsequent said scanning electrode.

1 40. The driving circuit for a liquid crystal display
2 according to Claim 37, wherein said liquid crystal display is of
3 a four dot pixel portion arranged type in which said color filters
4 made up of said red, green, and blue color filters and additional
5 any one color filter selected out of said red, green, and blue
6 color filters are arranged in a quadrangular form.

1 41. The driving circuit for a liquid crystal display
2 according to Claim 37, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up said dot pixel portion having different colors is connected
5 to one said signal electrode.

1 42. The driving circuit for a liquid crystal display

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2 according to Claim 37, wherein said liquid crystal display is of
3 an active-matrix type and its said switching element is made up
4 of a thin film transistor.

1 43. A driving circuit for a liquid crystal display in
2 which a liquid crystal cell is mounted at an intersection of each
3 of a plurality of scanning electrodes placed at specified
4 intervals in a row direction and each of a plurality of signal
5 electrodes placed at specified intervals in a column direction,
6 by sequentially feeding scanning signals to said plurality of said
7 scanning electrodes and by sequentially feeding data signals to
8 said plurality of said signal electrodes, comprising:

9 a signal electrode driving circuit to reverse a data signal
10 made up, relative to a common potential being applied to one
11 terminal of all said liquid crystal cells and during four
12 consecutive scanning periods, of combinations of a signal having
13 a potential of a first polarity that corresponds to an
14 intermediate transmittance between maximum and minimum
15 transmittance of said liquid crystal cell of a signal having a
16 potential of a first polarity that corresponds to said minimum
17 transmittance of said liquid crystal cell and of combinations of
18 a signal having a potential of a second polarity that corresponds
19 to said intermediate transmittance between said maximum and
20 minimum transmittance of said liquid crystal cell and of a signal
21 having a potential of said second polarity that corresponds to
22 said minimum transmittance of said liquid crystal cell, for every
23 said signal electrode and to sequentially feed said data signal
24 having the reversed polarity to each of corresponding said signal
25 electrodes.

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1 44. The driving circuit for a liquid crystal display
2 according to Claim 43, wherein a position of each of color filters
3 for red, green, and blue each corresponding to each of said liquid
4 crystal cells in said liquid crystal display is deviated by one
5 half of a pitch from subsequent said scanning electrode and said
6 liquid crystal display is of a delta type in which dot pixel
7 portions made up of three colors including red, green, and blue
8 that makes up one pixel portion are arranged in a triangular form.

1 45. The driving circuit for a liquid crystal display
2 according to Claim 43, wherein said liquid crystal display is of
3 a mosaic-type in which three color filters for red, green, and
4 blue each corresponding to each of said liquid crystal cell are
5 arranged in a repeated manner in this order in a scanning direction
6 and arrangement of said three color filters is deviated by one
7 or two pitches from subsequent said scanning electrode.

1 46. The driving circuit for a liquid crystal display
2 according to Claim 43, wherein said liquid crystal display is of
3 a four dot/pixel portion arranged type in which said color filters
4 made up of said red, green, and blue color filters and additional
5 any one color filter selected out of said red, green, and blue
6 color filters are arranged in a quadrangular form.

1 47. The driving circuit for a liquid crystal display
2 according to Claim 43, wherein, in said liquid crystal display,
3 a switching element used to drive said liquid crystal cell making
4 up said dot pixel portion having different colors is connected
5 to one said signal electrode.

Abstract

1 48. The driving circuit for a liquid crystal display
2 according to Claim 43, wherein said liquid crystal display is of
3 an active-matrix type and its said switching element is made up
4 of a thin film transistor.

1 49. An image display device provided with:
2 a driving circuit for a liquid crystal display in
3 which a liquid crystal cell is mounted at an intersection of each
4 of a plurality of scanning electrodes placed at specified
5 intervals in a row direction and each of a plurality of signal
6 electrodes placed at specified intervals in a column direction,
7 by sequentially feeding scanning signals to said plurality of said
8 scanning electrodes and by sequentially feeding data signals to
9 said plurality of said signal electrodes, said driving circuit
10 including:
11 a signal electrode driving circuit to reverse a polarity
12 of each of said data signals for every $2n$ (n is a natural number)
13 pieces of said scanning electrodes and for every signal electrode
14 in said liquid crystal display and to sequentially feed said each
15 of said data signals having reversed polarity to each of
16 corresponding said signal electrodes.

1 50. An image display device provided with:
2 a driving circuit for a liquid crystal display in which a
3 liquid crystal cell is mounted at an intersection of each of a
4 plurality of scanning electrodes placed at specified intervals
5 in a row direction and each of a plurality of signal electrodes
6 placed at specified intervals in a column direction, by
7 sequentially feeding scanning signals to said plurality of said

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15 natural number) pieces of said scanning electrode in said liquid
16 crystal display and for every said signal electrode and to
17 sequentially feed said data signal having the reversed polarity
18 to each of corresponding signal electrodes.

1 52. An image display device provided with:

2 a driving circuit for a liquid crystal display in which a
3 liquid crystal cell is mounted at an intersection of each of a
4 plurality of scanning electrodes placed at specified intervals
5 in a row direction and each of a plurality of signal electrodes
6 placed at specified intervals in a column direction, by
7 sequentially feeding scanning signals to said plurality of said
8 scanning electrodes and by sequentially feeding data signals to
9 said plurality of said signal electrodes, said driving circuit
10 including:

11 a signal electrode driving circuit to reverse a data signal
12 made up, relative to a common potential being applied to one
13 terminal of all said liquid crystal cells and during four
14 consecutive scanning periods, of combinations of a signal having
15 a potential of a first polarity that corresponds to an
16 intermediate transmittance between maximum and minimum
17 transmittance of said liquid crystal cell of a signal having a
18 potential of a first polarity that corresponds to said minimum
19 transmittance of said liquid crystal cell and of combinations of
20 a signal having a potential of a second polarity that corresponds
21 to said intermediate transmittance between said maximum and
22 minimum transmittance of said liquid crystal cell and of a signal
23 having a potential of said second polarity that corresponds to
24 said minimum transmittance of said liquid crystal cell, for every

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25 said signal electrode and to sequentially feed said data signal
26 having the reversed polarity to each of corresponding said signal
27 electrodes.

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